

**Manual 26907 (Revision NEW, 5/2015)
ECM3 Electronic Fuel Injection Control**

See manual 26349 for complete installation, operation, maintenance, and certification information. Publications can be found on our website at www.woodward.com/publications.

Important Definitions

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

- **DANGER**—Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
- **WARNING**—Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- **CAUTION**—Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
- **NOTICE**—Indicates a hazard that could result in property damage only (including damage to the control).
- **IMPORTANT**—Designates an operating tip or maintenance suggestion.

**WARNING**

The engine, turbine, or other type of prime mover should be equipped with an overspeed shutdown device to protect against runaway or damage to the prime mover with possible personal injury, loss of life, or property damage.

The overspeed shutdown device must be totally independent of the prime mover control system. An overtemperature or overpressure shutdown device may also be needed for safety, as appropriate.



Read this entire manual and all other publications pertaining to the work to be performed before installing, operating, or servicing this equipment. Practice all plant and safety instructions and precautions. Failure to follow instructions can cause personal injury and/or property damage.



This publication may have been revised or updated since this copy was produced. To verify that you have the latest revision, check manual **26455**, *Customer Publication Cross Reference and Revision Status & Distribution Restrictions*, on the *publications page* of the Woodward website: www.woodward.com/publications

The latest version of most publications is available on the *publications page*. If your publication is not there, please contact your customer service representative to get the latest copy.



Any unauthorized modifications to or use of this equipment outside its specified mechanical, electrical, or other operating limits may cause personal injury and/or property damage, including damage to the equipment. Any such unauthorized modifications: (i) constitute "misuse" and/or "negligence" within the meaning of the product warranty thereby excluding warranty coverage for any resulting damage, and (ii) invalidate product certifications or listings.

NOTICE

To prevent damage to a control system that uses an alternator or battery-charging device, make sure the charging device is turned off before disconnecting the battery from the system.

NOTICE

To prevent damage to electronic components caused by improper handling, read and observe the precautions in Woodward manual **82715**, *Guide for Handling and Protection of Electronic Controls, Printed Circuit Boards, and Modules*.

Go to www.woodward.com/publications for complete instructions (manual 26349).

Replacement/Exchange: Replacement/Exchange is a premium program designed for the user who is in need of immediate service. It allows you to request and receive a like-new replacement unit in minimum time (usually within 24 hours of the request), providing a suitable unit is available at the time of the request, thereby minimizing costly downtime.

This option allows you to call your Full-Service Distributor in the event of an unexpected outage, or in advance of a scheduled outage, to request a replacement control unit. If the unit is available at the time of the call, it can usually be shipped out within 24 hours. You replace your field control unit with the like-new replacement and return the field unit to the Full-Service Distributor.

Flat Rate Repair: Flat Rate Repair is available for many of the standard mechanical products and some of the electronic products in the field. This program offers you repair service for your products with the advantage of knowing in advance what the cost will be.

Flat Rate Remanufacture: Flat Rate Remanufacture is very similar to the Flat Rate Repair option, with the exception that the unit will be returned to you in "like-new" condition. This option is applicable to mechanical products only.

Returning Equipment for Repair

If a control (or any part of an electronic control) is to be returned for repair, please contact your Full-Service Distributor in advance to obtain Return Authorization and shipping instructions.

When shipping the item(s), attach a tag with the following information:

- return number;
- name and phone number of contact person;
- description of the problem;
- name and location where the control is installed;
- complete Woodward part number(s) and serial number(s);
- instructions describing the desired type of repair.

Contacting Woodward's Support Organization

For the name of your nearest Woodward Full-Service Distributor or service facility, please consult our worldwide directory published at www.woodward.com/directory.

You can also contact the Woodward Customer Service Department at one of the following Woodward facilities to obtain the address and phone number of the nearest facility at which you can obtain information and service.

Products Used In Electrical Power Systems	Products Used In Engine Systems	Products Used In Industrial Turbomachinery Systems
Facility ----- Phone Number	Facility ----- Phone Number	Facility ----- Phone Number
Brazil ----- +55 (19) 3708 4800	Brazil ----- +55 (19) 3708 4800	Brazil ----- +55 (19) 3708 4800
China ----- +86 (512) 6762 6727	China ----- +86 (512) 6762 6727	China ----- +86 (512) 6762 6727
Germany:	Germany ----- +49 (711) 78954-510	India ----- +91 (129) 4097100
Kempen---- +49 (0) 21 52 14 51	India ----- +91 (129) 4097100	Japan-----+81 (43) 213-2191
Stuttgart - +49 (711) 78954-510	Japan-----+81 (43) 213-2191	Korea-----+82 (51) 636-7080
India ----- +91 (129) 4097100	Korea-----+82 (51) 636-7080	The Netherlands--+31 (23) 5661111
Japan-----+81 (43) 213-2191	The Netherlands--+31 (23) 5661111	Poland ----- +48 12 295 13 00
Korea-----+82 (51) 636-7080	United States-----+1 (970) 482-5811	United States-----+1 (970) 482-5811
Poland ----- +48 12 295 13 00		
United States-----+1 (970) 482-5811		

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Regulatory Compliance & Declarations

European Compliance for CE Marking

These listings are limited only to those units bearing the CE Marking.

EMC Directive: 2004/108/EC COUNCIL DIRECTIVE of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and all applicable amendments.

ATEX – Potentially Explosive Atmospheres Directive: Declared to 94/9/EC COUNCIL DIRECTIVE of 23 March 1994 on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres. Zone 2, Category 3, Group II G, Ex nA IIC T4 Gc X IP66

North American Compliance

These listings are limited only to those units bearing the CSA agency identification.

CSA: CSA Certified for Class I, Division 2, Groups A, B, C & D, T4 with application-defined temperature limits. For use in Canada and the United States. Certificate 1801919 (LR 79726)

Marine Compliance

Lloyds Register of Shipping: Lloyd's Register of Shipping: LR Type Approval Test Specification No. 1, 2002 for Environmental Categories ENV1, ENV2, ENV3, and ENV4

Det Norske Veritas: Standard for Certification No. 2.4, 2006: Temperature Class B, Humidity Class B, Vibration Class B, EMC Class A, and Enclosure Class B.

Nippon Kaiji Kyokai: Rules Ch. 1, Part 7, of Guidance for the approval and type approval of materials and equipment for marine use and relevant Society's Rules.

General Compliance:

This product is certified as a component for use in other equipment. The final combination is subject to acceptance by CSA International or local inspection.

The ECM3 is suitable for use in Class I, Division 2, Groups A, B, C, D per CSA for Canada and US or non-hazardous locations only.

The ECM3 is suitable for use in European Zone 2, Group II environments per self-declaration to EN 60079-15.

Wiring must be in accordance with North American Class I, Division 2 and European Zone 2 wiring methods as applicable, and in accordance with the authority having jurisdiction.

Field Wiring must be suitable for at least 120 °C. Grounding is required to the input PE terminal.

Product listings are limited only to those units bearing the CSA or CE logos.

The 8-pin power connector should be used with a PVC boot (Deutsch part number DT8S-BT) when exposed to direct sunlight.

Special Conditions for Safe Use

The IP rating depends on the proper use of the mating connector. Use this manual to determine the power and maximum ambient temperature for the specific application.

The installer of the ECM3 must take responsibility for meeting Sub-Clause 26.4.2 of EN60079-0:2012 regarding impact testing. The connectors on the ECM3 by themselves do not meet this requirement and therefore must be sufficiently protected when installed.

! WARNING

EXPLOSION HAZARD—Do not remove covers or connect/disconnect electrical connectors unless power has been switched off or the area is known to be non-hazardous.

Substitution of components may impair suitability for Class I, Division 2.

Do not use any test points on the power supply or control boards unless the work area these will be used in is known to be a non-hazardous location.

! AVERTISSEMENT

RISQUE D'EXPLOSION—Ne pas enlever les couvercles, ni raccorder / débrancher les prises électriques, sans vous en assurez auparavant que le système a bien été mis hors tension; ou que vous vous situez bien dans une zone non explosive.


Le remplacement de composants peut rendre ce matériel inacceptable pour des applications de Classe I, Division 2.

Ne pas utiliser aucun points-test de l'alimentation ou des cartes de contrôle à moins que l'atmosphère soit non dangereuse.

! WARNING

HIGH VOLTAGE—Before doing any maintenance, always disconnect power and any hazardous voltages that may be connected, and follow all appropriate lockout/lockdown procedures.

! WARNING

ELECTROCUTION HAZARD—To reduce the risk of electric shock, Protective Earth (PE) must be connected to the top of the unit next to the label with the  symbol.

The conductor providing the connection must have a properly sized ring lug and wire gauge larger than or equal to 4 mm² (12 AWG). The ring lug should be placed between the nut and star washer.

The calibration and checkout procedure should only be performed by authorized personnel. To be authorized personnel, personnel must be knowledgeable of the risks posed by live electrical equipment.

The installation must include the following:

- The power supply mains should be properly fused according to the installation instructions and the appropriate wiring requirements.
- A switch or circuit breaker must be included in the installation. It must be in close proximity to the equipment, within easy reach of the operator. It must be clearly marked as the disconnecting device for the equipment power. The switch or circuit breaker will only need to remove power to the unit. Since hazardous voltages may still be connected to other terminals on the unit, appropriate actions must be taken for other voltages.

IMPORTANT

This unit is not qualified for use in residential installations due to EMC compliance. It is only allowed in non-residential applications.

DECLARATION OF CONFORMITY

DoC No.: 00330-04-EU-02-01.DOCX
Manufacturer's Name: WOODWARD INC
Manufacturer's Address: 1000 E. Drake Rd.
Fort Collins, CO, USA, 80525

Model Name(s)/Number(s): ECM3

Conformance to Directive(s): 2004/108/EC COUNCIL DIRECTIVE of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and all applicable amendments.

The object of the declaration described above is in conformity with the following Directives of the European Parliament and of the Council:

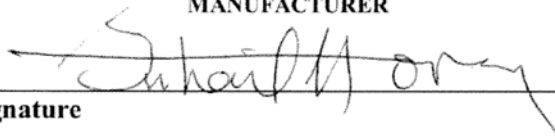
94/9/EC COUNCIL DIRECTIVE of 23 March 1994 on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres

Markings in addition to CE mark:  Category 3 Group II G, Ex nA IIC T4 Gc X IP66

Applicable Standards: EN61000-6-2:2005- EMC Part 6-2: Generic Standards - Immunity for Industrial Environments
EN61000-6-4:2011- EMC Part 6-4: Generic Standards - Emissions for Industrial Environments
EN60079-0: 2012 - Explosive Atmospheres - Part 0: Equipment – General requirements
EN60079-15: 2010 - Explosive Atmospheres - Part 15: Equipment protection by type of protection “n”

This declaration of conformity is issued under the sole responsibility of the manufacturer
We, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s).

MANUFACTURER



Signature

Suhail Horan

Full Name

Per Authorized Signature

Position

Woodward, Fort Collins, CO, USA

Place

11/5/2012

Date